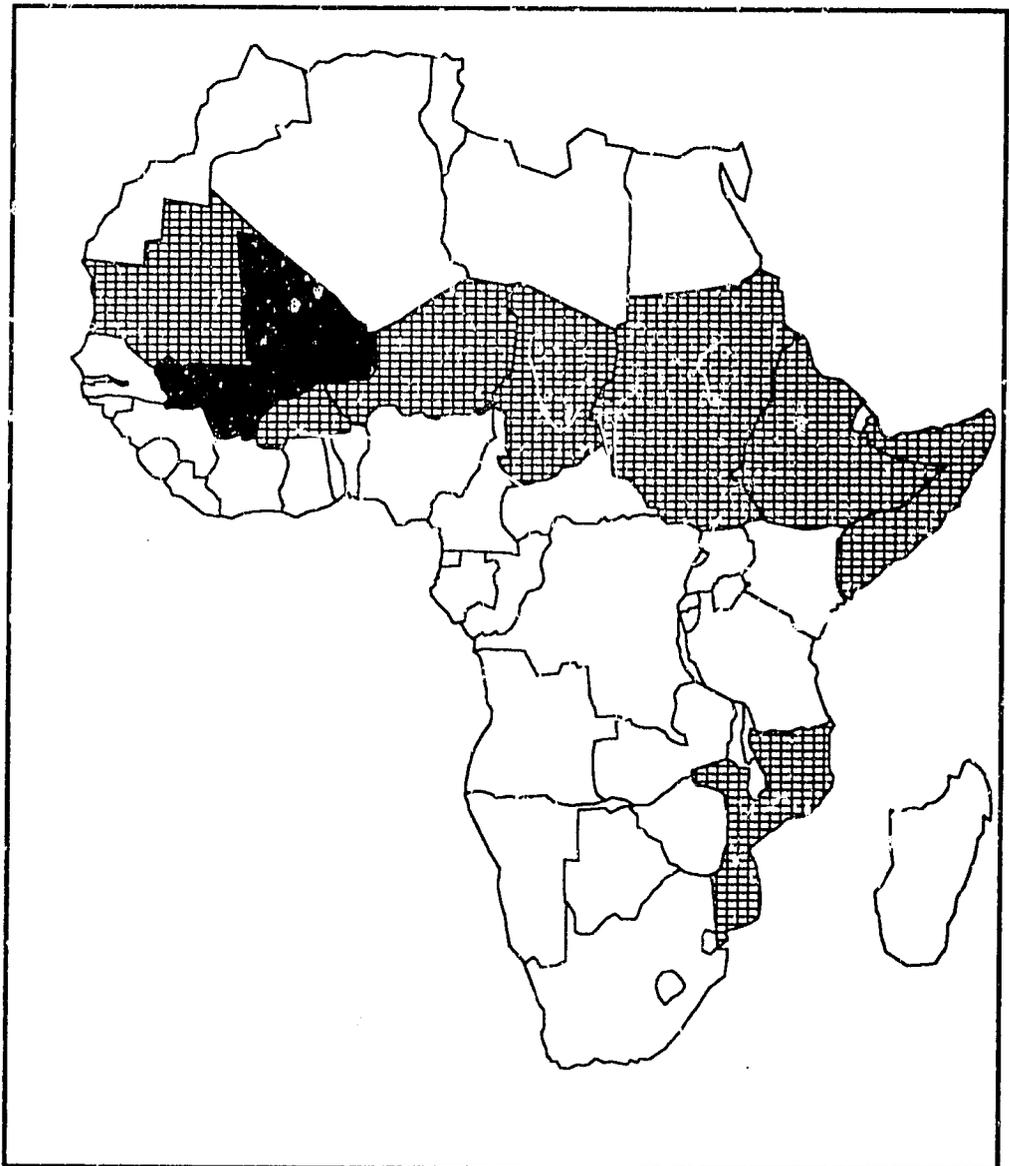


Report Number 4
September 1986

FEWS Country Report

MALI

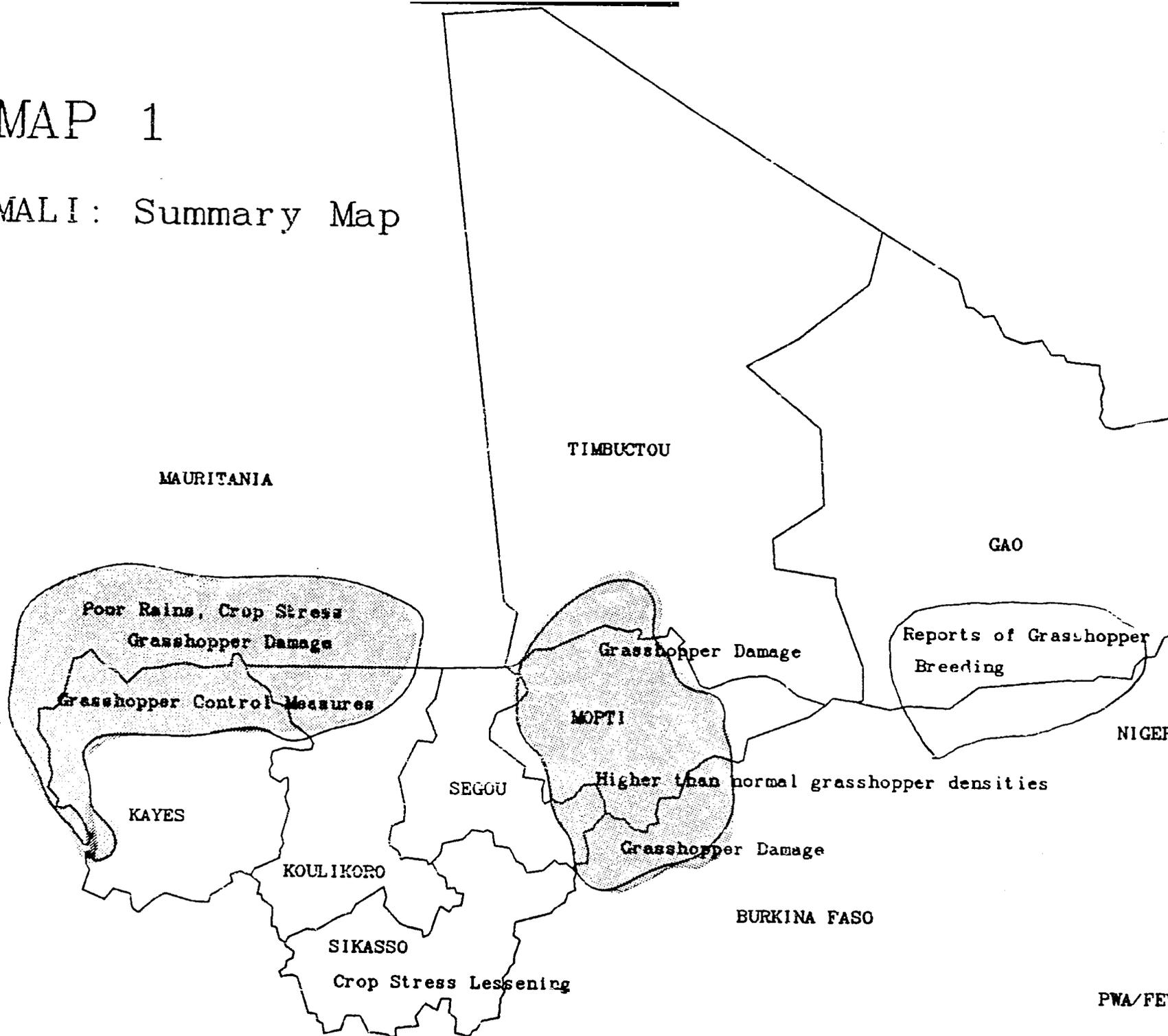


Africa Bureau
U.S. Agency
for International
Development

U.S. Agency for International Development
Room 105 SA-18
Washington, D.C. 20523

MAP 1

MALI: Summary Map



MALI

Situtation Similar to 1985

Prepared for the
Africa Bureau of the
U.S. Agency for
International Development

Prepared by
Price, Williams & Associates, Inc.
September 1986

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INTRODUCTION

This is the fourth of a series of monthly reports issued by the Famine Early Warning System (FEWS) on Mali. It is designed to provide decisionmakers with current information and analysis on existing and potential nutrition emergency situations. Each situation identified is described in terms of geographical extent and the number of people involved, or at-risk, and the proximate causes insofar as they have been discerned.

Use of the term "at-risk" to identify vulnerable populations is problematical since no generally agreed upon definition exists. Yet it is necessary to identify or "target" populations in-need or "at-risk" in order to determine appropriate forms and levels of intervention. Thus for the present, until a better usage can be found, FEWS reports will employ the term "at-risk" to mean...

...those persons lacking sufficient food, or resources to acquire sufficient food, to avert a nutritional crisis, i.e., a progressive deterioration in their health or nutritional condition below the status quo and who, as a result, require specific intervention to avoid a life-threatening situation.

Perhaps of most importance to decisionmakers, the process underlying the deteriorating situation is highlighted by the FEWS effort, hopefully with enough specificity and forewarning to permit alternative intervention strategies to be examined and implemented. Food assistance strategies are key to famine avoidance. However, other types of intervention can be of major importance both in the short-term and in the long-run, including medical, transport, storage, economic development policy change, etc.

Where possible, food needs estimates are included in the FEWS reports. It is important to understand, however, that no direct relation exists between numbers of persons at-risk and the quantity of food assistance needed. This is because famines are the culmination of slow-onset disaster processes which can be complex in the extreme.

The food needs of individual populations at-risk depend upon when in the disaster process identification is made and the extent of its cumulative impact on the individuals concerned. Further, the amount of food assistance required, whether from internal or external sources, depends upon a host of considerations. Thus the food needs estimates presented periodically in FEWS reports should not be interpreted to mean food aid needs, e.g., as under PL480 or other donor programs.

FEWS is operated by AID's Office of Technical Resources in the Bureau for Africa in cooperation with numerous USG and other organizations.

SUMMARY

In general, Mali at this time of year looks like Mali of last year. Rainfall, vegetation, grasshoppers, they all have followed a largely similar course to what was seen in 1985. With one major exception, rainfall amounts during this rainy season continue overall to be similar to last year, which was relatively good. The northern areas of Kayes and Koulikoro regions are much drier than last year, and will have lower crop production than a year ago. They are also the primary location of the most dense concentrations of grasshoppers in Mali, and most at-risk if there is any movement south of grasshoppers from Mauritania. The general grasshopper threat is being closely monitored, is not out of control, and still depends upon the evolution of rains in September. Aerial spraying will likely occur in the early part of September in a limited number of areas (primarily those mentioned above).

Issues

- o A cereal crop similar in size to that of 1985 is likely, barring major problems with rainfall in September.
- o The potential for a disastrous grasshopper or locust problem appears to be lessening. Densities and numbers of grasshoppers have consistently been less than those feared, (and sometimes reported) in July and early August.

Key Events

- o A possibility exists for major grasshopper problems coming from the south-eastern Mauritania area. Good rains in those areas in September could provoke more breeding than has currently been found.

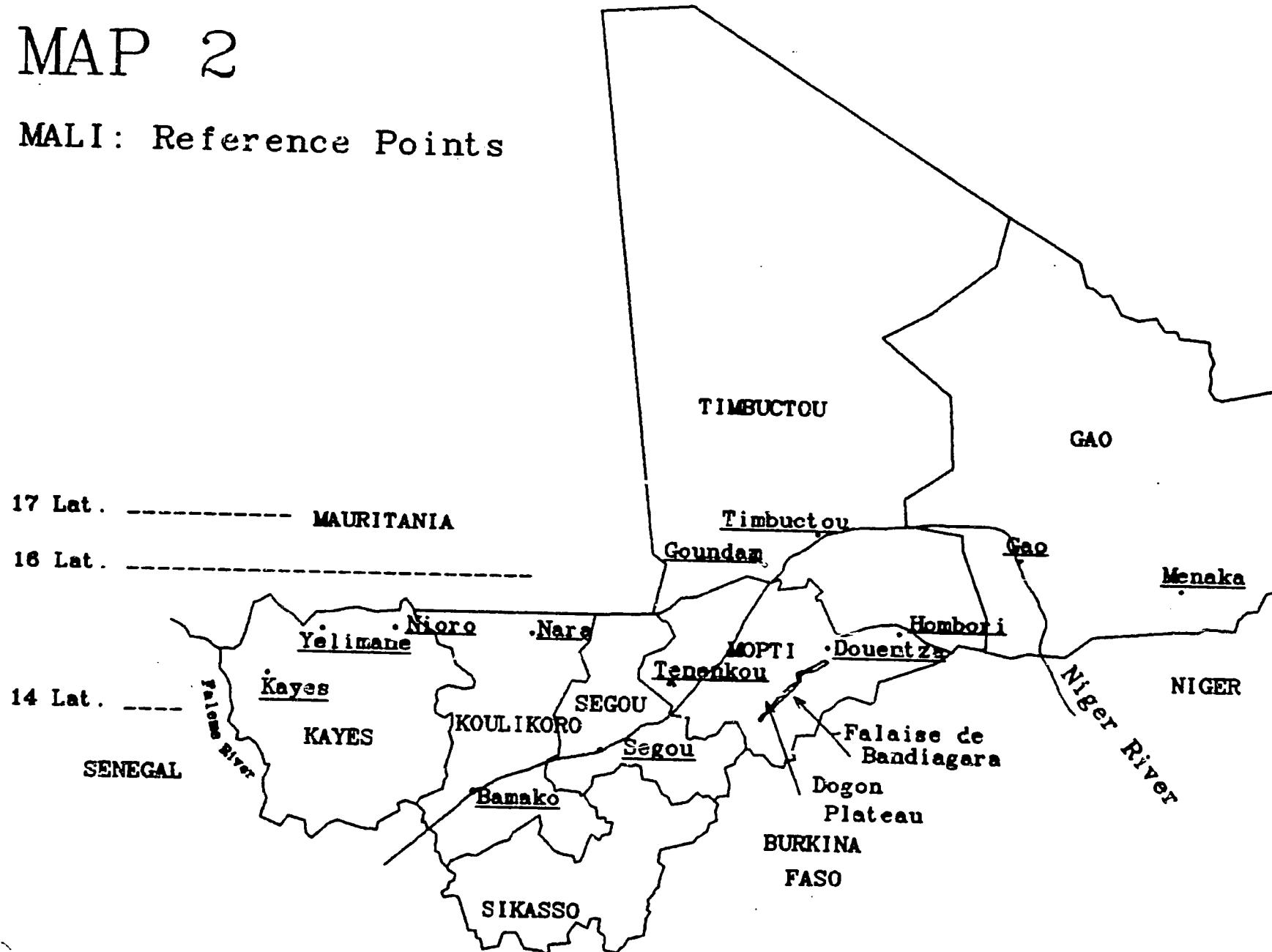
RAINFALL

A particularly dry band stretches through the northern halves of Kayes, Koulikoro, and Segou regions, where only 35 to 50% (60-80 mm) of normal monthly rainfall was received in August. This area was similarly deprived of rain in July, and the resultant crop stress will undoubtedly decrease yields and gross agricultural production.

Another generally rainfall-deficient area includes Mopti (50% of normal August rainfall), Timbuctou, Hombori, and Gao. Menaka also received only about 50% of its normal August rain (40-70mm), but rain did fall east and south of it in critical pasturelands. The Sikasso region, on the other hand, received 90-100% of normal rainfall amounts and partially recovered from mediocre rainfall in prior months.

MAP 2

MALI: Reference Points



VEGETATION/CROPS

Looking at the Regional Negative Vegetation Differences image (see Image # 1), which compares vegetation in the western-most areas of the Sahel from mid-August 1985 to the same period this year, Mali finds itself with less negative changes than its neighbors to the west, Senegal and Mauritania. It has, however, had more negative changes than those to the east, Niger and Chad.

In Mali, there is a broad belt of very negative change from 1985 levels of vegetative cover which runs from the Faleme River valley on the border with Senegal, up to Kayes, and then over eastwards through Yelimane, Niono, and Nara. This area extends up to and beyond the Mali-Mauritanian border to about the 16th parallel of latitude.

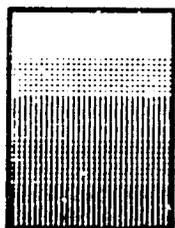
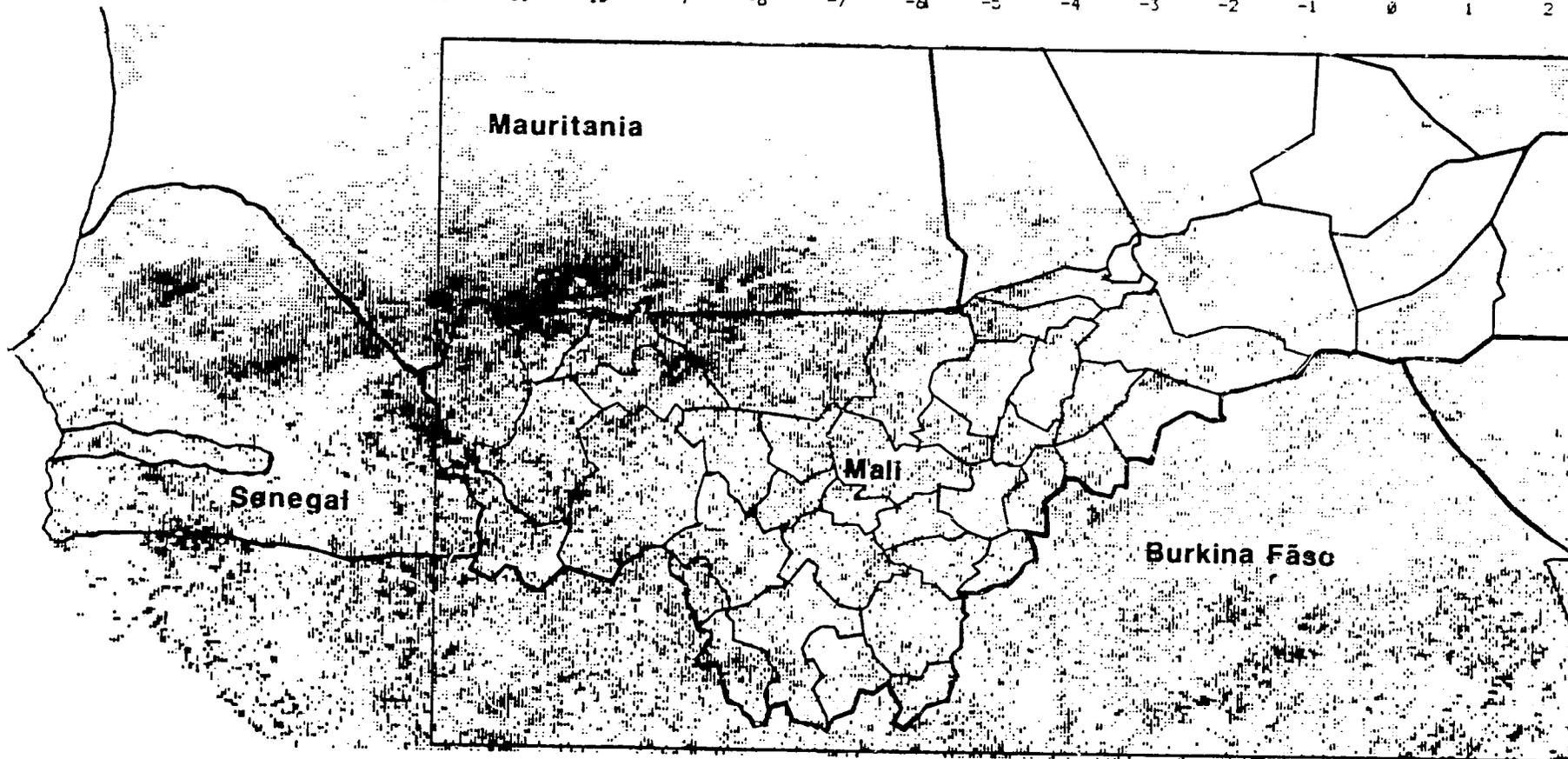
This is the same area in which the grasshopper problem has been the worst. There are also some less evident and more widely scattered positive changes (not shown here), but the overall national picture is one which is slightly worse in terms of vegetative cover than in 1985.

Image 1

SENEGAL - MAURITANIA - MALI:

Negative Vegetation Changes From
August 11-20, 1985 To August 11-20, 1986
(Source NOAA NVI)

-17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2



Clouds, No Change, or Positive Change

1 Category Decline

2

3

4



14

Kayes, Koulikoro, Segou, and parts of the Mopti region (Mali's 1st, 2nd, 4th, and parts of the 5th regions) started off with better vegetative cover on June 30, 1986 than in 1985 (see Image series # 2). This was true particularly of the area between the 13th and 15th degrees of latitude, at the level of Kayes to Kolokani and Segou. By August 20, 1986 there was little general difference between the two years (see Image series # 3), indicating slower growth or a decline in 1986. Other images show that most of this difference was due to a decline in the period running from the end of June to the end of July. There is also a significant decline in cover along the northern side of the Delta area, from Tenenkou to Goundam.

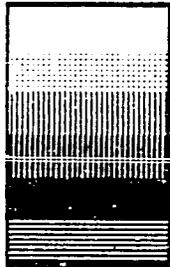
Sikasso, Region 3, shows a similar pattern to that described above, generally more vegetative cover at the beginning of the rainy season in 1986, and similar levels of greenness by the 20th of August. However, the levels in this region are much higher, showing the more dense vegetation, and would seem to indicate that crop production levels would currently be approximately the same as last year.

The eastern half of the Mopti region, Timbuctou, and Gao (Regions 5, 6 and 7) in eastern Mali started out with about the same levels of greenness as in 1985 (see Image series # 4). They continue to be about the same except for slight negative changes off the southern edge of the Falaise (cliff) of Bandiagara and southeast of Douentza. Note the clear outline of this cliff on the 1985 and the negative differences images. There are also slight positive changes (not shown here) on the Dogon Plateau.

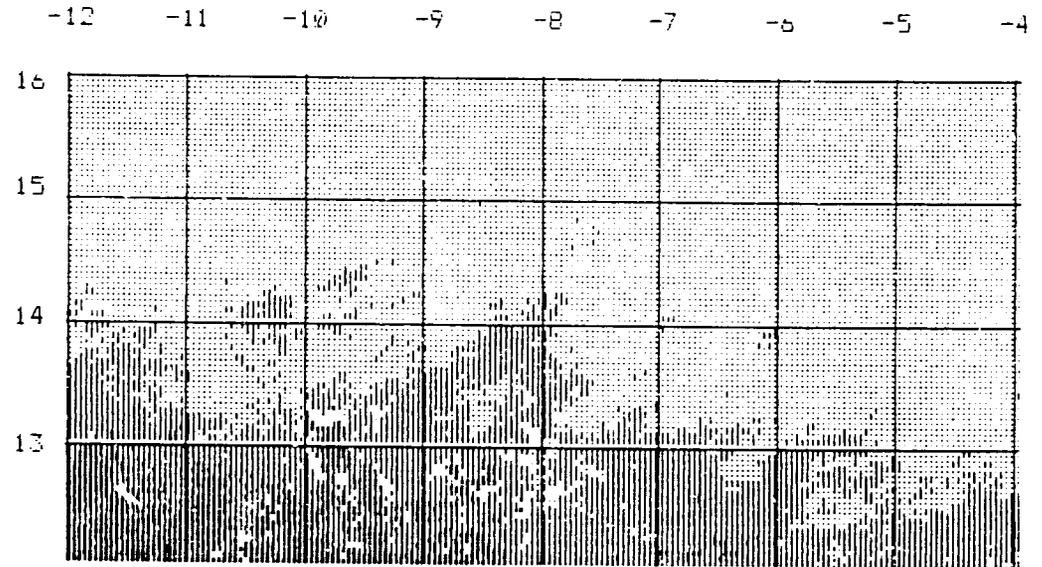
Image Series 2

MALI: West Central Vegetation Images

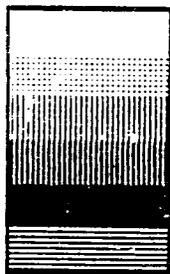
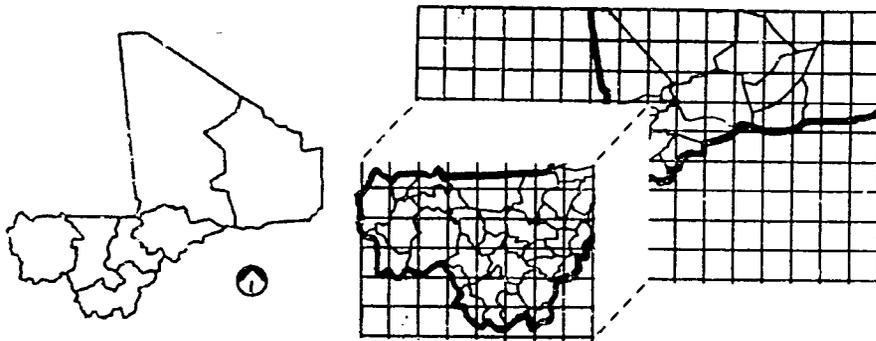
(Source NOAA NVI)



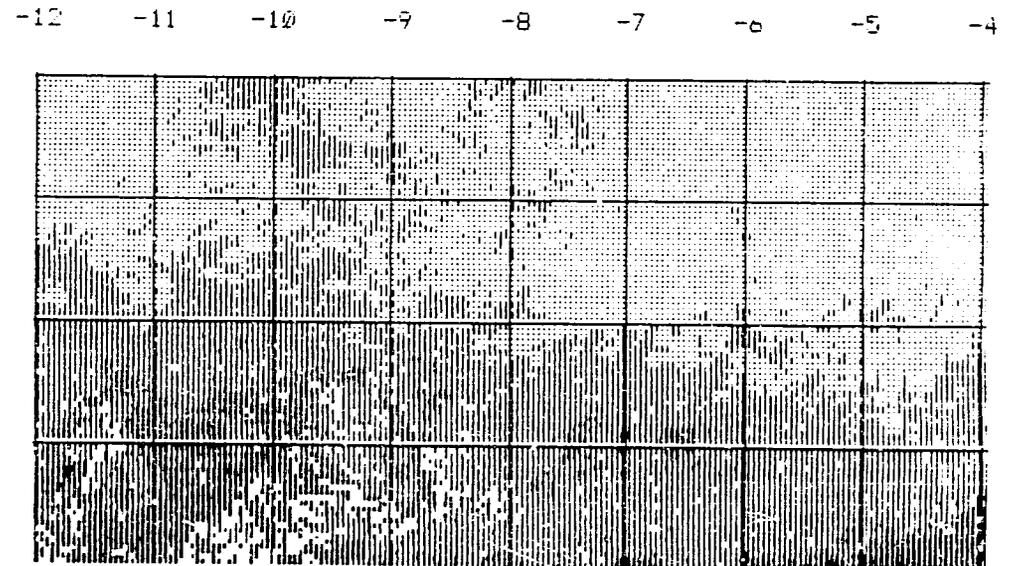
247	1.5858%	Clouds
10639	68.3038%	Bare Soil
3765	24.1716%	Sparse Vegetation
925	5.9386%	Vegetation
0	0.0000%	Heavy Vegetation
0	0.0000%	Water, Mud



June 21-30, 1985



547	3.5116%	Clouds
7078	45.4417%	Bare Soil
6298	40.4340%	Sparse Vegetation
1649	10.5868%	Vegetation
4	0.0257%	Heavy Vegetation
0	0.0000%	Water, Mud

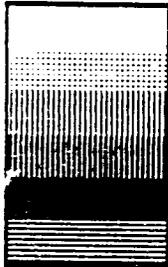


June 21-30, 1986

Image Series 3

MALI: West Central Vegetation Images

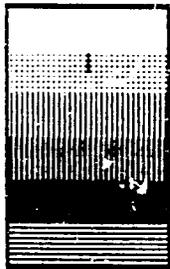
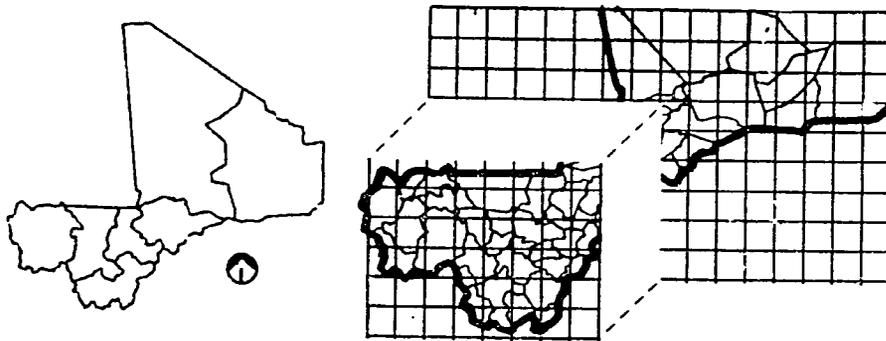
(Source NOAA NVI)



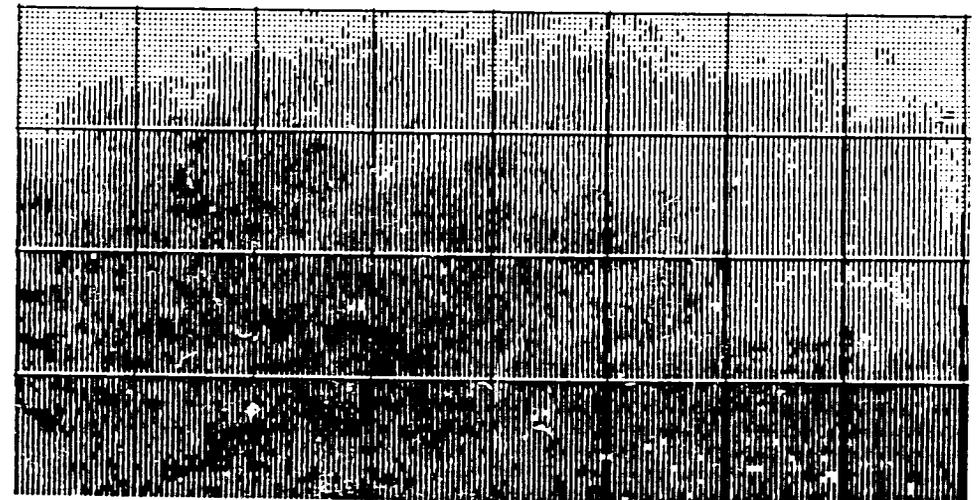
1371	8.8020%	Clouds
869	5.5791%	Bare Soil
4292	27.5552%	Sparse Vegetation
8187	52.5616%	Vegetation
855	5.4892%	Heavy Vegetation
2	0.0128%	Water, Mud



August 11-20, 1985



36	0.2311%	Clouds
2130	13.6749%	Bare Soil
5245	33.6736%	Sparse Vegetation
7358	47.2393%	Vegetation
803	5.1554%	Heavy Vegetation
4	0.0257%	Water, Mud



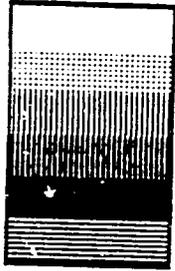
August 11-20, 1986

Image Series 4

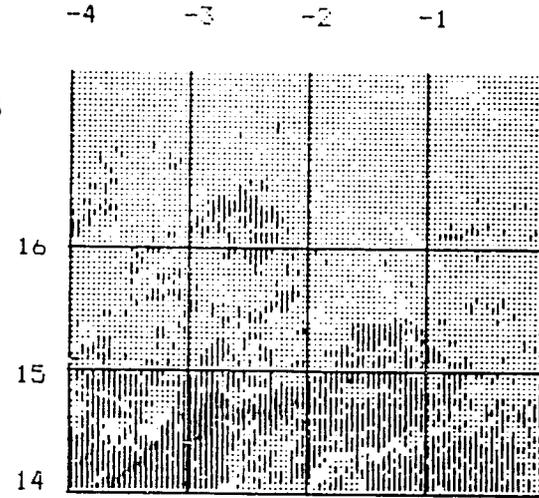
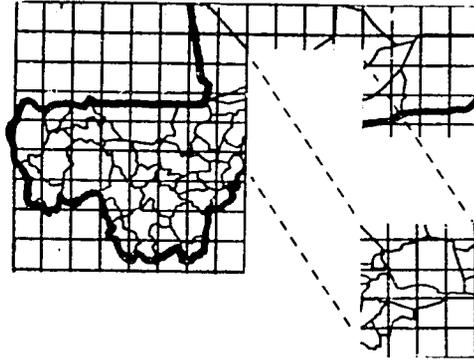
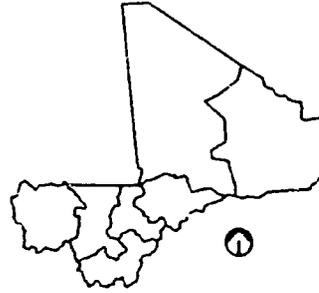
MALI: East Central

Vegetation & Negative Difference Images

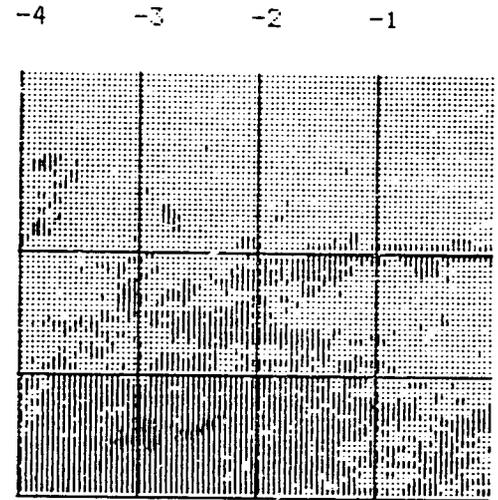
(Source NOAA NVI)



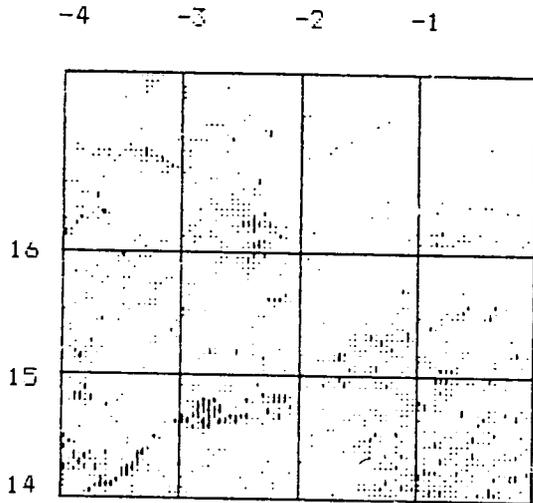
Clouds
Bare Soil
Sparse Vegetation
Vegetation
Heavy Vegetation
Water, Mud



August 11-20, 1985
Vegetation image



August 11-20, 1986
Vegetation image



Negative Difference Image: August 11-20, 1985 to
August 11-20, 1986
Note the strong definition of the Falaise de
Bandiagara on this, and the above Images
(See dark striation in two lower left cells).

8

GRASSHOPPERS

National - Outside of a serious infestation of locusts and grasshoppers in Senegal, the grasshopper infestation in north-west Mali seems to be the worst (see Map 3). To complicate matters for the population in this general area, extremely poor rains in both July and August will also significantly reduce crop production there.

The heaviest concentrations of grasshoppers are found in a band running from Kayes eastwards through Yelimane, Nioro and Nara. This band is bounded on the south by the 14th parallel of latitude, and in the north, beyond the Mauritanian border, by the 17th. It includes infestation areas of between 250,000 and 350,000 hectares.

Damage to this area's food production capability, due to both grasshoppers and poor rainfall has already occurred. It is extremely difficult to assess at the present what is, or will be the loss of food production in this area caused by both of these problems. However, the following graph serves to give a feel for the range of potential grasshopper loss, using different yield, hectareage infested, and loss rate assumptions. The loss rates used here are similar to those found last year.

Graph 1. Cereal Production in Infested Areas

Yield kg/ha.	Hectareage Infested (000 Ha.)					
	50	100	150	200	250	300
500	25	50	75	100	125	150
400	20	40	60	80	100	120
300	15	30	45	60	75	90
200	10	20	30	40	50	60

At 35% Loss Rate, '000 MT Lost to Grasshoppers

500	8.7	17.5	26	34.5	43	51.5
400	7	14	21	28	35	42
300	5.2	11.5	15.7	21	26.2	31.5
200	3.5	7	10.5	14	17.5	21

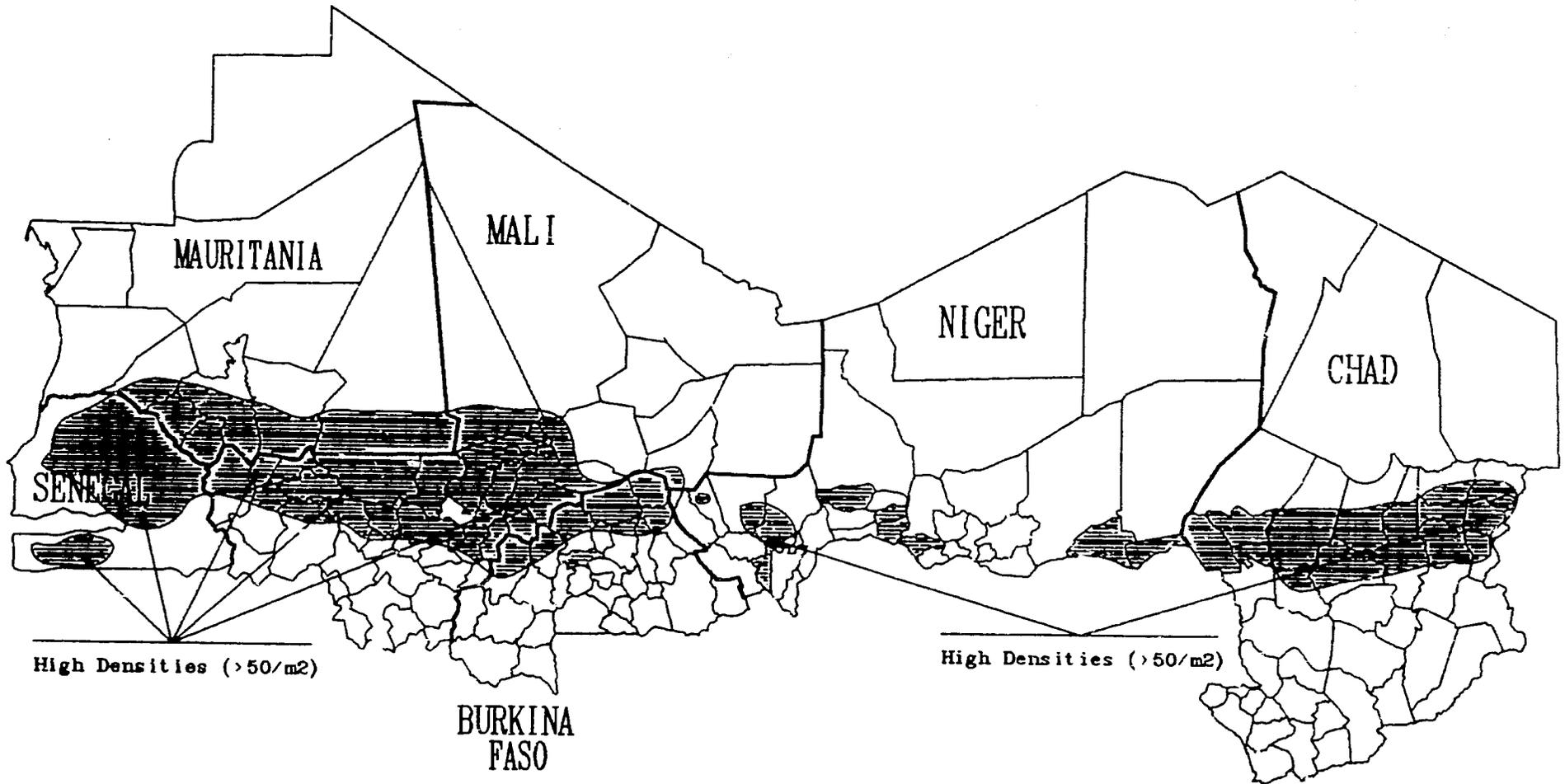
At 20% Loss Rate, '000 MT Lost to Grasshoppers

500	5	10	15	20	25	30
400	4	8	12	16	20	24
300	3	6	9	12	15	18
200	2	4	6	8	10	12

MAP 3

Grasshoppers & Locusts in the Western Sahel

September 1, 1986



10

Impact on Food Needs: The 1985-86 Malian deficit in cereal production was estimated in January, 1986 to be at between 104,000 MT (using the FAO standard 167 kg. per capita food need), and over 200,000 MT using higher per capita targets. The potential loss for only this area, given these assumptions, is therefore somewhere between insignificant (2,000 MT) and one-half (51,500 MT) of last season's cereal production deficit. The impact, of course, locally would be greatly felt at whatever loss rate, as the area is already a food deficit area.

Most national and international resources are being concentrated for an aerial spraying campaign in this area in early September. The area north of the border may also be sprayed to hit third-generation grasshoppers before they begin to return south in September and October. Norwegian, Canadian, and USAID/French donations of planes and helicopters will be stationed at airstrips in the area for rapid reconnaissance and quick spraying sorties as a response to located swarms.

In late August, USAID sponsored cross-border surveys found that the Mauritanian-Mali border areas were harboring less locusts and grasshoppers than feared. This undoubtedly had much to do with the very low rainfall and generally dry conditions of the area.

There is also a continuing problem with grasshoppers in other areas. Relatively high concentrations of grasshoppers have been found in Douentza, Mopti, Tenenkou, and Niafunke. As was seen above, these are also areas which are suffering the effects of extended dryness in this poor rainy season. There are also recent reports that grasshoppers may be increasing after local rains around and to the south of Gao, towards the Burkina Faso and Nigerien border areas. Indeed, Burkina Faso worries that Mali's concern with the north-west may allow a relatively unnoticed problem in these Delta areas to grow worse and come south late in the season.

Recent arrivals of pesticides donated by the Dutch, USAID, and others appear to have filled the immediate needs. Aerial spraying seems less of a problem now with pledges of aircraft being fulfilled. However, ground support for aerial operations would be seriously short if infestations became widespread late in the season.

The general picture now seems less ominous than last month. If rains do not significantly increase early in the month of September, particularly around the 16th degree of latitude, it is not likely that there will be a grasshopper or locust "disaster" in Mali.

Local spraying operations should prevent current local infestations from becoming swarms or plagues. Some damage has already occurred in the north-west and central areas of infestation, but its impact will not overwhelm local food assistance structures or resources.

The one cause for concern involves the position of the Inter-Tropical Discontinuity (ITD), the tropical front which pulls the rainy season with it as it moves northwards from nearer the equator. If the ITD does not retreat southwards as fast as it normally does starting in August, there could be rains occurring relatively later in the season. These would also occur farther North than is common. The current position of the ITD is to the north of where it normally is at this time.

Regional - The heaviest concentrations of grasshoppers and locusts (*Locusta migratoria*) in the Sahel are found in northern Senegal, across from the Mauritanian border (see Map 4). As the season progresses into September, it is likely that their normal movement will be southwards and away from Mali.

Still a slight possibility, given good early September rains in the parched south-eastern Mauritanian zone, would be a southward migration of grasshoppers/locusts from Mauritania. However, the densities of grasshoppers and locusts in this area are less than previously feared. Control measures will concentrate on this area.

Cooperation in control activities in the Mali-Mauritania-Senegal area, fostered by the ad hoc FAO locust work, and frequently initiated by various donors, particularly USAID in this region, has increased due to clearly perceived trans-border grasshopper and locust threats. The weaker links in this structure of coordination are the national crop protection services. They are struggling to deal nationally with functions which were performed regionally for them until recently. They lack training, operating funds, and a regional perspective honed by contact with their neighbors. While this year's experience may help to sharpen their skills, similar reinforcement of their resources will be needed.